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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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COUNTRY Poland

SUBJECT Poland's Iron and Steel Industry (Part I)/Iron Ores/ Domestic Production of Ores/Foreign Ores/Technical Problems Arising from Differences in Ores/Auxiliary Ores, Refractory Materials/Water Transport of Soviet Ore

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IRON ORES

2. "The Six-Year Plan aims at the annual production of steel in Poland to the amount of 4,500 thousand tons. To achieve this target, the Polish steel industry would require around seven million tons of iron ore, besides the scrap iron of which Poland used about 1,600 thousand tons in 1951. In 1955, which is the last year of the Six-Year Plan, utilization of scrap is to fall to the level of about 70% of that in 1951.

3. "Minc, in his speech at the Second Congress of Polish Communist Party, stated that 'own production of ferrous ores' had been 'neglected by our iron industry'. 'Iron ore mining has not fulfilled the tasks imposed by the Six-Year Plan; the main reason for it is that the construction of new mines meeting technical requirements, on which the main burden of increasing ore production in 1954 should have been laid, had not been completed in time.'

4. "In this connection, Minc demanded the construction of new ore mines and mechanization of the existing ones, as well as preparation of detailed geological maps and elaboration of projects for new pit mines, open cast mines, and plants for processing ferrous sands. It may be assumed on the grounds of Minc's speech that the problem of supplies of ore and of its domestic production is one of the most urgent in the fulfillment of the Six-Year Plan. It is a fact that not earlier than 1952 the production of ore in Poland exceeded the figure of the year 1938 (production in 1938 in Poland

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was 872 thousand tons, and in former German territories now belonging to Poland - 75 thousand tons, totalling 947 thousand tons). This production in 1952 amounted to 1,027 thousand tons.

Domestic production of ores

5. Poland's reserves of ores are rather small. Of those which were exploited during the period between World War I and World War II, the most important are deposited at:

(a) Area of Zawiercie, Czestochowa, Wielun - the reserves of ore in this area are estimated at 15-18 million tons. The ore contains between 28% and 50% of iron - which is rather a high percentage. The shortcoming is that the ore is clayey, with high moisture. This raises considerably the costs of production since the ore must be dried and calcined. The deposits are easily accessible and widely spread. Exploitation is going on by a cheap method, mainly by open cast mining. The Six-Year Plan provided for the construction of eight mechanized mines in this district. The ore in Czestochowa district has a clayey character and contains a high percentage of silica and alumina; it requires an excessive amount of lime, which makes the production more costly.

(b) District of Radom, Kielce, Starachowice, Ostrowiec - has been exploited in the past. Its reserves are only about three million tons of ore, with the iron content not higher than 18-40%. In Radom-Kielce area, there are deposits of limonite or brown ore which contains a large percentage of phosphorus minerals and a high percentage of water and is variable in composition. On the northern slopes of Swietokrzyskie mountains, exploration borings are proceeding on deposits of ferrous sands. There is still no information regarding the value of these reserves and the percentage of iron in them. As Minc devoted special attention to these deposits in his report made at the Second Congress of the Party, it may be presumed that they should be quite considerable. Under the Six-Year Plan, four mechanized ore mines are being constructed in the Kielce district.

(c) Olkusz, Tarnowskie Gory, Dabrowa, Rybnik - pit and open cast mines existing before World War II have small ore reserves (several million tons).

(d) Deposits in former German Territories (mainly in the vicinity of former Schmiedeberg) are rather small. In 1938 they yielded 75,000 tons.

(e) Newly discovered deposits. The regime carries on widespread geological exploration looking for new deposits of ore. It may be assumed from the reports in the press that some reserves of ore estimated now at 150,000 tons have been found in Podkarpacie /sic/ area, but detailed information is lacking.

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6. "The following discoveries have been mentioned: Tuchow; - ore between 40-60%; Sambor; area south of Rybnik. Siderite ores containing up to 57% have been found in the neighborhood of Chelm. (Siderite - iron carbonate ore, gives 57% Fe after calcining and roasting.)

7. "According to the most recent information of 1953, Polish reserves of iron ores are estimated as totalling 200,000 thousand tons; these ores vary in quality, composition and iron content.

8. "Polish production of iron ore was 659 thousand tons in 1948. In 1952 it amounted to 1,027 thousand. In 1953 the target of two million tons was not achieved. The planned production for 1955 is three million tons. In the next stage, the Polish production of ore is supposed to reach the figure of five million /tons/ which, however, should be considered as exaggerated. Nevertheless, this figure appears in the statements and reports of the State Commission for Economic Planning.

Foreign Ores

9. "As the supply of domestic ores is insufficient, the Polish steel industry is based on the use of regular supplies of imported ores, in particular from the USSR and Sweden. Besides, the use of imported ores decreases production costs. Taking under consideration that in 1955 Poland will need seven million tons of ore, and her own production of ore is planned at three million only, the import of about four million tons every year will be needed. In 1952, Poland imported about 2.2 million foreign ores in all.

Soviet Ore

10. "The USSR is at present the main supplier of ore to Poland. The ore is transported mainly from Krivoy Rog in the Ukraine. Most of it is hematite ore, containing up to 70% of metallic iron and 30% of oxygen, with a small percentage of phosphorus. Some deliveries were however observed of brown ores (38-43% of iron and a large percentage of phosphorus - 0.45%-1.0%) from Kerch Peninsula in the Crimea, and of magnetite ore from Kursk. It is difficult to calculate directly the volume of deliveries of ore from the USSR. This ore is directed mainly to new foundries like Bierut Foundry in Czestochowa, or to the reconstructed foundries about which more will be said later. Nowa Huta is also prepared for Soviet ores to a large extent. The old Polish foundries which have not been reconstructed meet great difficulties when using the Soviet ore. Most of this ore is 'fine' ore for which the old Polish foundries do not possess sufficient sintering equipment. These foundries were adapted mostly for Swedish lump ore.

Swedish Ore

11. "This is exclusively magnetite ore with the iron content of 60-68% and content of phosphorus varying from 0.14% to 2.5%. It comes mainly from the deposits at Kiruna. Swedish ore is imported to Poland under existing commercial agreements, but these imports show a declining tendency. In 1951 they amounted to 900,000 tons; in 1953 they fell to 735,000 tons and are still steadily decreasing.

Other Foreign Ores

12. "The trade agreements concluded by Poland show clearly that Poland is constantly looking for high-quality iron ores, if she can get them on favorable terms, especially on barter terms.

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13. "China: On the grounds of the trade agreement of 25 May 1953, China delivers some quantities of iron ore to Poland. Presumably these deliveries have been introduced to the agreement so that ships of the Chinopol shipping line would not return empty to Poland.

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17. "East Germany: In 1951 this country supplied 75,000 tons of iron ore to Poland. It is not known whether these deliveries were maintained in the subsequent years.

18. "All the above information serves to work out the following table showing domestic production and imports of iron ore in Poland.

	1951	1952	1953
	(in thousands of metric tons)		
Domestic production	901	1,027	1,150 approx.
Imports:			
Sweden	922	800	735
Soviet Union	1,200	1,400 phosphoric	1,800 approx.
Other countries:			
Norway	59	150 approx.	150
East Germany	75		-
France	10		90
India and China			?
	3,167	3,377	3,965

These figures are approximate. There are as yet no detailed figures concerning the domestic production; but it may be deducted from various elements that the increase in production in comparison with 1952, must have been slight. No data are available either on the imports of Indian and Chinese ores, but in all probability the deliveries are small and can in no way change the actual situation. Available information would show that imports of Soviet ores have approached the level of two million tons but have not reached it yet. This information is also confirmed by the analysis of the production of steel. This production, in 1953, amounted to 3,604 thousand tons, and around 1,600 thousand tons of scrap iron were probably used for it. To supplement the difference, about four million tons of ore would have been required.

19. "In the future, with a full achievement of the target for 1955 (4,600 thousand tons of steel) and the probable decrease in the use of scrap, it will be indispensible to obtain seven or more millions of tons of ore. Even if the Polish mines yield three million and imports from non-Soviet countries is maintained at the present level of about one million, the imports of Soviet ore will have to be minimum three million, and probably about four million tons. It should be added that according to some calculations, Poland will need nine million tons of ore in 1955.

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20. "The Six-Year Plan provides for the construction of 35 new mechanized iron ore mines. For orientation, here is a table showing the production of ore in Poland, according to the statistics of British Iron and Steel Federation.

	1937	1938	1948	1952
Czestochowa	643			
Dabrowa	15			
Radom	111	872		
Tarnowskie Gory	3		659	1,027
Pre-World War II Poland	772	872		
Former German territories	61	75		
TOTAL:	833	947	659	1,027

Technical Problems Arising from Differences in Ores

21. "The Polish steel industry works now on different ores, which creates a number of technical problems to be dealt with. All ores, either domestic or foreign, vary in content of iron from 30 to 70% and of silica from 5 to 25%. They are delivered to foundries in different forms, sometimes in powder, and sometimes in big lumps. As already mentioned, Soviet ores are unsuitable for use in a number of older foundries because they are 'fine' ores requiring sintering. Concerning iron content, it is necessary to make it standardized by mixing the ores.

22. "The theoreticians of the Six-Year Plan expect that when sorting, mixing, and sintering works in all more important Polish foundries are properly modernized, the capacity of blast furnaces measured in square meters per day will increase by about 30%, the expense of coke per ton of produced pig iron will decrease by 20%, the use of ore will be reduced by 8-10%, and that of refractory materials by 25-30%. Sintering works are being constructed or already exist in Bobrek Foundry (Bytom), Pokoj Foundry (Nowy Bytom), Bierut Foundry (Czestochowa) and in Nowa Huta near Krakow Sintering, sorting, and mixing works are to be erected in all foundries which have blast furnaces.

Auxiliary Ores, Refractory Materials, etc.

23. "Poland possesses sufficient reserves of refractory raw materials. Within the Nowa Huta combinate a factory of refractory materials is being constructed. This factory by itself is to produce more than a half of the whole Polish production in this branch in the year 1938. Another plant of the same type is developed with the foundry at Gliwice.

24. "There are however, difficulties with the supply of ferro-alloys. Poland is searching for the following alloys on the markets of the Soviet bloc and in the outside markets:

- Molybdenum
- Titanium
- Chromium
- Manganese
- Niobium, Columbium (Niobite, Columbite)
- Vanadium, Wolfram
- Cobalt, Pyrites

The situation of these supplies is estimated to be quite tragic still. In the vicinity of Walbrzych (30 km to south-east), there are small deposits of nickel from which up to 500 tons per year are produced. Northeast of Walbrzych a ferro-chrome foundry is being erected, but there are no details on its achievements.

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24. [redacted] the imports to Poland of auxiliary raw materials were, in 1951, as follows:

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	Fluorite	Wolfram	Molybdenum	Manganese	Chrome	Pyrites
			(in metric tons)			
USSR				49,000	5,000	
East Germany	5,500					20,000
West Germany	3,000					55,000
Rumania						2,000
Bulgaria	1,600					5,600
Switzerland						19,500
Austria						1,200
Italy	50					10,000
China	500	1,200	24			
Albania					8,150	
Turkey				1,500		

25. "In the years 1952-3, under the concluded commercial agreements, the following countries exported such raw materials to Poland:

- USSR (Chrome and manganese ore)
- China (tungsten)
- Bulgaria
- India (manganese ore)
- South Africa (chrome ore)
- Italy (wolfram, titanium, tetraethyl lead)
- Austria (the treaty provides for annual exports to Poland of 4,000 tons crushed magnetite, 10,000 tons rough magnetite, US $ 350,000 worth of molybdenum and iron dross)

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[redacted] Poland is interested in samples of new metal alloys for steel, produced in the West, especially by the US steel industry.

Water Transport of Soviet Ore

26. "The adaptation of the Polish steel industry to the use of Soviet ores involves the problem of transportation. To transport three-four million tons of ore by rail would mean creating a block on the main transit railway lines between East and West. Hence, the Six-Year Plan provides for the initiation of at least preliminary works aimed towards making the Polish waterways suitable for traffic.

27. "From the point of view of the steel industry, most essential are the projects of the East-West waterway which would connect the system of Soviet waterways with the Polish one, and farther with the East German one. The important element of this project is the proper regulation of the Vistula River.

Projects to make Vistula navigable:

28. "The sector of the Vistula River between the outlet of Przemsza and the outlet of Dunajec is to be canalized because the river is not sufficiently deep to ensure a continuous, regular traffic. At the same time the waters will be dammed up, giving in this section 70 million kwh of electric power per year.

29. "The sector between the outlet of Dunajec and the outlet of San requires narrowing and deepening. Water level in this sector may be kept up by supplies from water-pools planned on the river Dunajec.

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30. "The sector between the outlet of San and Warsaw may be put in order in a comparatively short time (several years) by the construction of a dam below San which would equalize the water level and additionally produce large quantities of electric power. The plans for a water pool with a capacity of over ten milliard cubic meters are being worked out. In this way, upper and middle Vistula would become a communication waterway joining Silesia, Krakow Sandomierz, Warsaw, and a part of the East-West waterway through the river Bug.

31. "Further plans provide for the supplementation of Vistula network with a canal Vistula-Odra-to Kozle, which would connect the whole water system with the Silesian valley.

Sector of Vistula near Warsaw

32. "It is planned to construct a big inland harbor (the so-called Warsaw Water Junction - Warszawski Wezel Wodny). A steady water level in this harbor would be secured by sluices on the Vistula and the canal to Bug in which also the waters would be dammed up. The harbor is to become and important industrial center, where many factories, breweries, fermenting works, etc. would be established. From the point of view of the holiday season, the creation of an artificial lake at the side of the Bug River will be an additional benefit.

East-West Canal:

33. "From Warsaw, the East-West waterway will lead by the Bug River to Brzesc, and by Muchawiec it will connect to the system of Prypec river and the South-Ukrainian Canal. Through this Canal the East-West waterway will join with the system of Don and Volga Rivers.

34. "Regulation of the Bug River is a rather difficult problem because of the small difference of water level (falling by 60 meters in the course of the river between Brzesc and the outlet), and additional benefits are few, as it is impossible to dam up the waters sufficiently. However, even in this sector 500,000,000 kwh of electric power may be obtained.

35. "A further project exists for the construction of a canal between Deblin and Brzesc which would shorten the route from Brzesc to Silesia from 1,500 km to 600 km.

36. "Through Vistula between Modlin and Brdyujscie, Bydgoszcz Canal, Notec and Warta, the Polish sector of East-West waterway would connect to the German Mittellandkanal and farther with the Rhine river, etc.

37. "The project of East-West waterway provides for the construction or enlargement of the harbors in Warsaw, Sandomierz, and Kracow. When completed, this waterway should have a transport capacity of 10 million tons per year.

38. "Apart from the preparation of blueprints, technical personnel, and machinery necessary for the construction of East-West waterway, the Six-Year Plan stipulates:

(a) Regulation of Bug between Brzesc and Modlin by the construction of water pools of different grades. In this sector the route will be shortened by 15%.

(b) Completion of the control works on Vistula between Modlin and Brdyujscie.

(c) Construction of a pool on Dunajec by Czorsztyn, and reconstruction of the pool on Soła.

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39. "Nothing is known of any control works on the Soviet sector of East-West waterway. At any rate, the construction of this waterway is a huge task extending far beyond the Six-Year Plan in time. This means that for a long time yet the deliveries of Soviet ores to the Polish foundries shall have to be effected by land, which route is far more costly and also rather inconvenient as the railways between East and West are often blocked."

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